Attorney's Docket No.: 14170-038006/25-31-0099



Applicant: Hugh R. Sharkey et al.

Serial No.: 10/712,006

Art Unit: Unknown
Examiner: Unknown

Filed: November 14, 2003

Title : METHOD FOR TREATING INTERVERTEBRAL DISCS

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

I. Disclosure of the Attached Form PTO-1449

Applicants submit the attached form PTO-1449 (13 pages). This application claims priority to the following U.S. patent applications referenced by Serial No.: 10/388,609, 09/707,627, 09/236,816, 09/162,704, 09/153,552, 08/881,525, 08/881,692, 08/881,527, 08/881,693, 08/881,694, 09/876,833, 09/876,832, 09/876,831, 10/624,894, 09/753,786, 09/022,688, 10/242,777, 09/340,065, 09/022,612, 09/776,231, 09/776,186, 09/272,806, 09/884,859, 09/792,628, 09/664,473, 08/696,051. All of the references were submitted to and/or cited by the Office in one or more of the priority applications and, therefore, are not provided in this application.

These references are provided for the sake of completeness and may be no more pertinent than or may be cumulative to references already supplied.

II. Disclosure of Patent Litigation of Related Patents

This application is related (by a claim of priority) to U.S. Pat. Nos. 5,980,504 ("the '504 patent") and 6,261,311 ("the '311 patent) that are being asserted by their owner Smith & Nephew against a company Arthrocare because of Arthrocare's SpineWand product and its use in a procedure called Nucleoplasty. Smith & Nephew filed a Complaint and Arthrocare answered the Complaint on August 7, 2003, and asserted a counterclaim that the '504 and '311 patents were unenforceable due to inequitable conduct (see Reference MI, paragraphs 37-39). A copy of Arthrocare's Answer and Counterclaim is submitted as Reference MI.

A. Characterizations of U.S. Pat. No. 5,433,739

Arthrocare alleges that one of the inventors and/or others involved with the prosecution of the application leading to the '504 and '311 patents misrepresented material information about

Applicant: Hugh R. Sharkey et al. Attorney's Docket No.: 14170-038006 25-31-0099

Serial No.: 10/712,006

: November 14, 2003 Filed

Page : 2 of 4

U.S. Pat. No. 5,433,739 ("the '739 patent") in comments made at col. 3, lines 56-58 of the '311 patent and at col. 3, lines 23-25 of the '504 patent. The characterizations of the '739 patent identified by Arthrocare in the '311 patent are also in the present application. To address the allegations related to the '739 patent, Applicants offer the following remarks.

Statements in the '311 Patent Identified by Arthrocare

Arthrocare identifies the statement that "neither embodiment of the devices of the '739 patent . . . provide[s] for focal delivery of therapy to a selected local region within the disc or precise temperature control at the annulus" in the '311 patent at col. 3, lines 56-58 as a misrepresentation of material information. Smith & Nephew, owner of the present application, disputes the allegation.

Focal Delivery of Therapy to a Selected Local Region

The statement in the '311 patent is accurate. Neither embodiment of the devices of the '739 patent "provide[s] for focal delivery of therapy to a selected local region within the disc." The '739 patent is directed to "heating the entire disc to a temperature significantly above body temperature. The heated disc will, in turn, heat the nerves which innervate its surface, and they will be destroyed or altered if the heat of the disc is elevated to an appropriately high temperature." Thus, rather than focal delivery of therapy to a selected local region within the disc, the '739 patent describes "global heating" of the disc.

In addition to the '739 patent discussing placing an electrode approximately at the center of the disc to achieve a global spread of heat throughout the disc,² the '739 patent also describes depositing primary heat at different regions within the disc,³ and denervating neural structures on a "semi-global" basis. ⁴ This global or semi-global heating or denervation is not "focal delivery of therapy to a selected local region within the disc."

b) Precise Temperature Control

The statement made in the '311 patent is accurate. Neither embodiment of the devices of the '739 patent "provide[s]... precise temperature control at the annulus." The '739 patent

¹ The '739 patent at col. 2, lines 52-60.

² The '739 patent at col. 5, lines 58-65.

³ The '739 patent at col. 9, lines 19-20 and 46-49, and col. 14, lines 61-68.

⁴ The '739 patent at col. 5, lines 67-68.

Applicant: Hugh R. Sharkey et al. Attorney's Docket No.: 14170-038006

25-31-0099

Serial No.: 10/712,006

Filed: November 14, 2003

Page : 3 of 4

describes monitoring temperature⁵ and states, as an objective, that an operator using multiple temperature monitors at remote "points in space relative to the primary RF lesion electrode"can control the exact temperature distribution⁶. However, the operator monitoring of the '739 patent does not provide precise temperature control at the annulus or anywhere else, which is exemplified by the description in the '311 patent of "the use of [temperature] sensors 48 and feedback control system 52, [to maintain] a tissue . . . at a desired temperature for a selected period of time without aberrant high temperature fluctuations". While the '739 patent describes that an "rf generator may also include . . . control circuitry to vary and monitor the radio frequency power delivered to the electrode," the '739 patent does not describe that the control circuitry is used to control temperature.

2. Statements in the '504 Patent Identified by Arthrocare

Arthrocare identifies the statement that "the embodiments of the '739 patent do not . . . provide for delivery of material to treat the annulus, nor do the embodiments permit temperature monitoring at the posterior annulus" in the '504 patent at col. 3, lines 56-57 as a misrepresentation of material information. Smith & Nephew disputes the allegation as detailed below.

a) Delivery of Material to Treat the Annulus

The statement in the '504 patent is accurate. That is, the embodiments of the '739 patent do not even "provide for delivery of material to treat the annulus." First, the '739 patent does not identify the anatomical structure of the annulus of the disc. Second, though the '739 patent describes devices that can deliver anesthetic, the anesthetic is used to assist in the process of identifying the proper disc to treat, not to treat the disc, much less to treat the annulus of the disc. 9

b) Temperature Monitoring at the Posterior Annulus

The statement is accurate that the embodiments of the devices of the '739 patent do not "permit temperature monitoring at the posterior annulus." The anatomy of the spine prohibits

⁵ The '739 patent at col. 5, lines 65-67.

⁶ The '739 patent at col. 4, lines 10-20.

⁷ The '311 patent at col. 19, lines 10-13,

⁸ The '739 patent at col. 5, lines 23-26.

⁹ The '739 patent at col. 14, lines 9-16.

Applicant: Hugh R. Sharkey et al. Attorney's Docket No.: 14170-038006 25-31-0099

Serial No.: 10/712,006

: November 14, 2003 Filed

: 4 of 4 Page

access to the posterior annulus from a directly posterior position. ¹⁰ The '739 patent states that "another way of measuring the temperature throughout the disc and at remote positions would be to have a side outlet probe." As described, the side outlet probe emanates along a curved trajectory. 12 However, that curved trajectory (shown in dashed lines in Fig. 2 of the '739 patent) does not reach the posterior annulus, and thus the devices of the '739 patent do not permit temperature monitoring at the posterior annulus.

III. Prior Art Not Cited in Related Applications

Arthrocare also alleges that U.S. Pat. No. 5,486,161 was withheld from the Patent Office during prosecution of the '504 and '311 patents. This reference has been supplied to the Patent Office and the examiner is invited to consider the reference in the context of the examination of the present claims.

This statement is being filed before the receipt of a first Office action on the merits. Please apply any charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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11th Floor

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¹⁰ The '504 patent at col. 2, lines 50-53.

11 The '739 patent at col. 9, lines 37-39.

¹² The '739 patent at col. 9, lines 37-45 and col. 12, lines 56-65.



Substitute/Form PTO-1449

U.S. Department of Commerce Patent and Trademark Office Attomey's Docket No. 14170-038006

Application No. 10/712,006

Information Disclosure Statement by Applicant (Use several sheets if necessary) Applicant Hugh R. Sharkey et al.

Filing Date

Group Art Unit To be assigned

(37 CFR §1.98(b))

November 14, 2003

U.S. Patent Documents Publication Filing Date Examiner Desig. Document Number Date Patentee Class Subclass If Appropriate Initial 1D 06/08/75 Kidder AA164,184 06/10/84 Starr AB 300,155 AC 371,664 10/18/87 Brannan et al. AD 452,220 05/12/91 Gunning 09/02/19 Carpenter AE 1,314,855 01/25/21 Wappler AF 1,366,756 10/15/29 Johnson et al AG 1,731,627 11/12/29 Groff AΗ 1,735,271 ΑI 1,814,791 07/14/31 Ende AJ 1,908,583 05/09/33 Wappler ΑK 1,916,722 07/04/33 Ende 10/24/33 Wappler AL1,932,258 01/16/34 McFadden AM 1,943,543 1,983,669 12/11/34 Kimble AN 05/28/35 Wappler et al. 2,002,594 AO Wappler et al. 06/11/35 AP 2,004,559 08/11/36 Trice 2,050,904 AQ 10/06/36 Wappler AR 2,056,377 Wolf 12/10/40 AS 2,224,464 03/03/42 Bierman 2,275,167 AT 06/02/59 2,888,928 Seiger ΑU 10/13/64 Rodriguez Zurdo et al. ΑV 3,152,590 AW 3,163,165 12/29/64 ·Isikawa AX3,460,539 08/12/69 Anhalt ΑY 3,595,239 07/27/71 Petersen Willis AZ3,655,032 04/11/72

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Substitute Form PTO-1449 (Modified)

U.S. Department of Commerce Patent and Trademark Office Attorney's Docket No. 14170-038006

Application No. 10/712,006

Information Disclosure Statement
by Applicant
(Use several sheets if necessary)

Hugh R. Sharkey et al.

Applicant

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(37 CFR §1.98(b))

Filing Date
November 14, 2003

Group Art Unit
To be assigned

| BA | 3,768,482 | 10/30/73 | Shaw | | |
|----|-----------|----------|--------------------|------|--|
| BB | 3,769,984 | 11/06/73 | Muench | | |
| BC | 3,801,766 | 04/02/74 | Morrison | | |
| BD | 3,815,604 | 06/11/74 | O'Malley et al. | | |
| BE | 3,828,780 | 08/13/74 | Morrison | | |
| BF | 3,870,047 | 03/11/75 | Gonser | | |
| BG | 3,901,242 | 08/26/75 | Storz | | |
| ВН | 3,902,494 | 09/02/75 | Haberlen et al. | | |
| BI | 3,920,021 | 11/18/75 | Hiltebrandt | | |
| ВЈ | 3,920,022 | 11/18/75 | Pastor | | |
| BK | 3,938,527 | 02/17/76 | Rioux et al. | | |
| BL | 3,970,088 | 07/20/76 | Morrison | | |
| BM | 3,987,795 | 10/26/76 | Morrison | | |
| BN | 4,011,872 | 03/15/77 | Komiya | | |
| ВО | 4,016,881 | 04/12/77 | Roiux et al. | | |
| BP | 4,034,762 | 07/12/77 | Corsens et al. | | |
| BQ | 4,040,426 | 08/09/77 | Morrison | | |
| BR | 4,060,086 | 11/29/77 | Storz | | |
| BS | 4,060,087 | 11/29/77 | Hiltebrandt et al. | | |
| BT | 4,060,088 | 11/29/77 | Morrison | | |
| BU | 4,116,198 | 09/26/78 | Roos | | |
| BV | 4,140,130 | 02/20/79 | Storm III | | |
| BW | 4,170,234 | 10/09/79 | Graham | | |
| BX | 4,181,131 | 01/01/80 | Ogiu | | |
| BY | 4,184,492 | 01/22/80 | Meinke et al. | | |
| BZ | 4,240,441 | 12/23/80 | Khalil | | |

| Exam | | |
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| | | |
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To be assigned

Substitute Form PTO-1449 Application No. U.S. Department of Commerce Attorney's Docket No. (Modified) Patent and Trademark Office 10/712,006 14170-038006 Applicant **Information Disclosure Statement** Hugh R. Sharkey et al. by Applicant (Use several sheets if necessary) Filing Date Group Art Unit

November 14, 2003

(37 CFR §1.98(b))

| | | | | | - |
|----|-----------|----------|-----------------|------|---|
| CA | 4,301,802 | 11/24/81 | Poler | | |
| CE | 4,411,266 | 10/25/83 | Cosman | | |
| CC | 4,418,692 | 12/06/83 | Guay | | |
| CD | 4,427,006 | 01/24/84 | Nottke | | |
| CE | 4,448,198 | 05/15/84 | Turner | | |
| CF | 4,478,822 | 10/23/84 | Haslam et al. | | |
| CC | 4,524,770 | 06/25/85 | Orandi | | |
| CH | 4,545,374 | 10/08/85 | Jacobson | | |
| CI | 4,559,951 | 12/24/85 | Dahl et al. | | |
| CJ | 4,562,838 | 01/07/86 | Walker | | |
| CK | 4,565,200 | 01/21/86 | Cosman | | |
| CI | 4,643,186 | 02/17/87 | Rosen et al. | | |
| CM | 4,646,737 | 03/03/87 | Hussein et al. | | |
| CN | 4,672,962 | 06/16/87 | Hershenson | | |
| CC | 4,682,596 | 07/28/87 | Bales et al. | | |
| CP | 4,688,569 | 08/25/87 | Rabinowitz | | |
| CC | 4,699,157 | 10/13/87 | Shonk | | |
| CR | 4,712,559 | 12/15/87 | Turner | | |
| CS | 4,719,914 | 01/19/88 | Johnson | | |
| СТ | 4,735,201 | 04/05/88 | O'Reilly | | |
| CU | 4,753,223 | 06/28/88 | Bremer | | |
| CV | 4,754,752 | 07/05/88 | Ginsburg et al. | | |
| CW | 4,765,331 | 08/23/88 | Petruzzi et al. | | |
| СХ | 4,769,005 | 09/06/88 | Ginsburg et al. | | |
| CY | 4,784,161 | 11/15/88 | Skalsky et al. | | |
| CZ | 4,800,899 | 01/31/89 | Elliott | | |

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| DA | 4,805,616 | 02/21/89 | Pao |
|----|-----------|----------|------------------|
| | | 03/14/89 | Stevens |
| DB | 4,811,743 | | |
| DC | 4,823,791 | 04/25/89 | D'Amelio et al. |
| DD | 4,846,175 | 07/11/89 | Frimberger |
| DE | 4,860,744 | 08/29/89 | Johnson et al. |
| DF | 4,917,092 | 04/17/90 | Todd et al. |
| DG | 4,919,129 | 04/24/90 | Weber et al. |
| DH | 4,924,882 | 05/15/90 | Donovan |
| DI | 4,927,420 | 05/22/90 | Newkirk et al. |
| DJ | 4,936,301 | 06/26/90 | Rexroth et al. |
| DK | 4,943,290 | 07/24/90 | Rexroth et al. |
| DL | 4,950,267 | 08/21/90 | Ishihara et al. |
| DM | 4,955,378 | 09/11/90 | Grasso |
| DN | 4,976,711 | 12/11/90 | Parins et al. |
| DO | 5,007,908 | 04/16/91 | Rydell |
| DP | 5,013,312 | 05/07/91 | Parins et al. |
| DQ | 5,084,044 | 01/28/92 | Quint |
| DR | 5,084,043 | 01/28/92 | Hertzmann et al. |
| DS | RE 33,925 | 05/12/92 | Bales et al. |
| DT | 5,122,138 | 06/16/92 | Manwaring |
| DU | 5,125,928 | 06/30/92 | Parins et al. |
| DV | 5,158,561 | 10/27/92 | Rydell et al. |
| DW | 5,163,938 | 11/17/92 | Kambara et al. |
| DX | 5,171,255 | 12/15/92 | Rydell |
| DY | 5,205,816 | 04/27/93 | Dodson et al. |
| DZ | 5,207,675 | 05/04/93 | Canady |

| Examiner Signature | Date Considered |
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| EXAMINER: Initials citation considered. Draw line through citation if no next communication to applicant. | t in conformance and not considered. Include copy of this form with |

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| EA | 5,211,625 | 05/18/93 | Sakurai et al. | |
|----|-----------|----------|-------------------|--|
| EB | 5,241,972 | 09/07/93 | Bonati | |
| EC | 5,254,121 | 10/19/93 | Manevitz et al. | |
| ED | 5,273,524 | 12/28/93 | Fox et al. | |
| EE | 5,277,696 | 01/11/94 | Hagen | |
| EF | 5,281,213 | 01/25/94 | Milder et al. | |
| EG | 5,281,218 | 01/25/94 | Imran | |
| EH | 5,282,845 | 02/01/94 | Bush et al. | |
| EI | 5,300,069 | 04/05/94 | Hunsberger et al. | |
| EJ | 5,301,687 | 04/12/94 | Wong et al. | |
| EK | 5,318,525 | 06/07/94 | West et al. | |
| EI | 5,336,222 | 08/09/94 | Durgin et al. | |
| EM | 5,364,839 | 11/15/94 | Gerhart et al. | |
| EN | 5,383,876 | 01/24/95 | Nardella | |
| EC | 5,383,923 | 01/24/95 | Webster | |
| EF | 5,385,148 | 01/31/95 | Lesh et al. | |
| EC | 5,396,900 | 03/14/95 | Slater et al. | |
| EF | 5,403,311 | 04/04/95 | Abele et al. | |
| ES | 5,409,008 | 04/25/95 | Svenson et al. | |
| ET | 5,421,819 | 06/06/95 | Edwards et al. | |
| EU | 5,423,808 | 06/13/95 | Edwards et al. | |
| EV | 5,423,811 | 06/13/95 | Imran et al. | |
| EV | 5,423,815 | 06/13/95 | Fugo | |
| ЕУ | 5,423,882 | 06/13/95 | Jackman et al. | |
| EY | 5,431,649 | 07/11/95 | Mulier et al. | |
| EZ | 5,433,708 | 07/18/95 | Nichols et al. | |

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Application No. 10/712,006

Information Disclosure Statement by Applicant (Use several sheets if necessary)

Filing Date

Hugh R. Sharkey et al.

Group Art Unit

(37 CFR §1.98(b))

November 14, 2003 To be assigned

| FA | 5,437,664 | 08/01/95 | Cohen et al. | |
|----|-------------|----------|-------------------|--|
| FE | 5,441,499 | 08/15/95 | Fritzsch | |
| FC | 5,454,809 | 10/03/95 | Janssen | |
| FE | 5,456,682 | 10/10/95 | Edwards et al. | |
| FF | 5,458,597 | 10/17/95 | Edwards et al. | |
| FF | 5,470,309 | 11/28/95 | Edwards et al. | |
| FC | 5,472,426 | 12/05/95 | Bonati et al. | |
| FH | 5,472,441 | 12/05/95 | Edwards et al. | |
| FI | 5,487,385 | 01/30/96 | Avitall | |
| F. | 5,520,645 | 05/28/96 | Imran et al. | |
| F | 5,522,815 | 06/04/96 | Durgin | |
| FI | 5,540,681 | 07/30/96 | Strul et al. | |
| FM | 1 5,542,945 | 08/06/96 | Fritzsch | |
| Fì | J 5,545,161 | 08/13/96 | Imran | |
| FC | 5,545,193 | 08/13/96 | Fleischman et al. | |
| FI | 5,569,244 | 10/29/96 | Hahnen | |
| FC | 2 5,569,245 | 10/29/96 | Guglielmi et al. | |
| FI | 5,571,147 | 11/05/96 | Sluijter et al. | |
| FS | 5,573,533 | 11/12/96 | Strul | |
| F | 5,582,609 | 12/10/96 | Swanson et al. | |
| FI | J 5,584,830 | 12/17/96 | Ladd et al. | |
| F | V 5,601,572 | 02/11/97 | Middleman et al. | |
| FV | V 5,603,709 | 02/18/97 | Johnson | |
| F | X 5,607,422 | 03/04/97 | Smeets et al. | |
| F | Y 5,637,090 | 06/10/97 | McGee et al. | |
| F | Z 5,643,255 | 07/01/97 | Organ | |

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U.S. Department of Commerce Patent and Trademark Office Attorney's Docket No. Application No. Substitute Form PTO-1449 (Modified) 14170-038006 10/712,006 Applicant **Information Disclosure Statement** Hugh R. Sharkey et al. by Applicant (Use several sheets if necessary) Filing Date Group Art Unit November 14, 2003 To be assigned (37 CFR §1.98(b))

| GA | 5,673,707 | 10/07/97 | Chandrasekaran | |
|----|-----------|----------|----------------------|--|
| GB | 5,676,662 | 10/14/97 | Fleischhacker et al. | |
| GC | 5,680,860 | 10/28/87 | Imran | |
| GD | 5,683,384 | 11/04/97 | Gough et al. | |
| GE | 5,687,723 | 11/18/97 | Avitall | |
| GF | 5,688,267 | 11/18/97 | Panescu et al. | |
| GG | 5,693,050 | 12/02/97 | Speiser | |
| GH | 5,694,945 | 12/09/97 | Ben-Haim | |
| GI | 5,697,281 | 12/16/97 | Eggers et al. | |
| GJ | 5,697,536 | 12/16/97 | Eggers et al. | |
| GK | 5,697,882 | 12/16/97 | Eggers et al. | |
| GL | 5,735,792 | 04/07/98 | Vander Hoek et al. | |
| GM | 5,697,927 | 12/16/97 | Imran et al. | |
| GN | 5,700,262 | 12/23/97 | Acosta et al. | |
| GO | 5,738,683 | 04/14/98 | Osypka | |
| GP | 5,741,245 | 04/21/98 | Cozean et al. | |
| GQ | 5,743,903 | 04/28/98 | Stern et al. | |
| GR | 5,762,626 | 06/09/98 | Lundquist et al. | |
| GS | 5,766,153 | 06/16/98 | Eggers et al. | |
| GT | 5,779,646 | 07/14/98 | Koblish et al. | |
| GU | 5,779,699 | 07/14/98 | Lipson | |
| GV | 5,782,795 | 07/21/98 | Bays | |
| GW | 5,785,705 | 07/28/98 | Baker | |
| GX | 5,797,903 | 08/25/98 | Swanson et al. | |
| GY | 5,807,306 | 09/15/98 | Shapland et al. | |
| GZ | 5,810,802 | 09/22/98 | Panescu et al. | |

| Examiner Signature | Date Considered |
|--------------------|-----------------|
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EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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| | HA | 5,836,875 | 11/17/98 | Webster | |
|---|----|-----------|----------|-------------------|----------|
| | НВ | 5,836,892 | 11/17/98 | Lorenzo | |
| - | HC | 5,836,947 | 11/17/98 | Fleischman et al. | |
| | HD | 5,853,409 | 12/29/98 | Swanson et al. | |
| | HE | 5,857,991 | 01/12/99 | Grothoff et al. | |
| | HF | 5,860,951 | 01/19/99 | Eggers et al. | |
| | HG | 5,860,974 | 01/19/99 | Abele | |
| | НН | 5,861,002 | 01/19/99 | Desai | |
| | HI | 5,871,469 | 02/16/99 | Eggers et al. | |
| | HJ | 5,871,501 | 02/16/99 | Leschinsky et al. | |
| | HK | 5,873,855 | 02/23/99 | Eggers et al. | |
| | HL | 5,882,346 | 03/16/99 | Pomeranz et al. | |
| | HM | 5,885,217 | 03/23/99 | Gisselberg et al. | |
| | HN | 5,885,278 | 03/23/99 | Fleischman | |
| | НО | 5,888,198 | 03/30/99 | Eggers et al. | |
| | HP | 5,891,095 | 04/06/99 | Eggers et al. | |
| | HQ | 5,897,553 | 04/27/99 | Mulier et al. | |
| | HR | 5,902,272 | 05/11/99 | Eggers et al. | |
| | HS | 5,910,129 | 06/08/99 | Koblish et al. | <u> </u> |
| | HT | 5,916,158 | 06/29/99 | Webster | |
| | HU | 5,916,166 | 06/29/99 | Reiss | |
| | HV | 5,921,924 | 07/13/99 | Avitall | |
| | HW | 5,935,123 | 08/10/99 | Edwards et al. | |
| | HX | 5,980,471 | 11/09/99 | Jafari | |
| | HY | 5,980,504 | 11/09/99 | Sharkey et al. | |
| | HZ | 5,991,650 | 11/23/99 | Swanson et al. | |
| | | | | | |

| Examiner Signature | Date Considered |
|--|---|
| | |
| EXAMINER: Initials citation considered. Draw line through citation if no | t in conformance and not considered. Include copy of this form with |
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| Substitute Form PTO-1449 (Modified) | U.S. Department of Commerce Patent and Trademark Office | Attorney's Docket No. 14170-038006 | Application No. 10/712,006 | | |
|--|---|------------------------------------|----------------------------|--|--|
| | Information Disclosure Statement by Applicant (Use several sheets if necessary) | Applicant Hugh R. Sharkey et al. | | | |
| (Use several s | heets if necessary) | Filing Date | Group Art Unit | | |
| (37 CFR §1.98(b)) | | November 14, 2003 | To be assigned | | |

| | | 1 | | |
|-------------|----|-------------|-------------|-------------------|
| | IA | 5,993,424 | 11/30/99 | Lorenzo et al. |
| | IB | 6,004,319 | 12/21/99 | Goble et al. |
| | IC | 6,007,570 | 12/28/99 | Sharkey et al. |
| | ID | 6,010,493 | 01/04/00 | Snoke |
| | IE | 6,014,579 | 01/11/00 | Pomeranz et al. |
| | IF | 6,017,361 | 01/25/00 | Mikus et al. |
| | IG | 6,023,638 | 02/08/00 | Swanson |
| | IH | 6,033,397 | 03/07/00 | Laufer et al. |
| | II | 6,036,688 | 03/14/00 | Edwards |
| | IJ | 6,048,329 | 04/11/00 | Thompson et al. |
| | IK | 6,048,340 | 4/11/00 | Miyagi |
| | IL | 6,053,172 | 04/25/00 | Hovda et al. |
| | IM | 6,056,744 | 05/02/00 | Edwards |
| | IN | 6,073,051 | 06/06/00 | Sharkey et al. |
| | IO | 6,079,417 | 06/27/00 | Fugo |
| | IP | 6,093,185 | 07/25/00 | Ellis et al. |
| | IQ | 6,095,149 | 08/01/00 | Sharkey et al. |
| | IR | 6,099,514 | 08/08/00 | Sharkey et al. |
| | IS | 6,102,046 | 08/15/00 | Weinstein et al. |
| | IT | 6,105,581 | 08/22/00 | Eggers et al. |
| | IU | 6,106,522 | 08/22/00 | Fleischman et al. |
| | IV | 6,113,591 | 09/05/00 | Whayne et al. |
| | IW | 6,122,549 | 09/19/00 | Sharkey et al. |
| | IX | 6,126,682 | 10/03/00 | Sharkey et al. |
| | IY | 6,135,999 | 10/24/00 | Fanton et al. |
| | IZ | 6,165,139 | 12/26/00 | Damadian · |
| | | | | |

| Examiner Signature | Date Considered |
|---|---|
| EXAMINER: Initials citation considered. Draw line through citation if no next communication to applicant. | t in conformance and not considered. Include copy of this form with |

U.S. Department of Commerce Patent and Trademark Office Attorney's Docket No. Application No. Substitute Form PTO-1449 (Modified) 14170-038006 10/712,006 Applicant **Information Disclosure Statement** Hugh R. Sharkey et al. by Applicant (Use several sheets if necessary) Filing Date Group Art Unit November 14, 2003 To be assigned (37 CFR §1.98(b))

| JA | 6,168,593 | 01/02/01 | Sharkey et al. |
|----|--|--|---|
| JВ | 6,171,306 | 01/09/01 | Swanson et al. |
| JC | 6,179,836 | 01/30/01 | Eggers et al. |
| JD | 6,203,525 | 03/20/01 | Whayne et al. |
| JE | 6,217,528 | 04/17/01 | Koblish et al. |
| JF | 6,224,592 | 05/01/01 | Eggers et al. |
| JG | 6,241,754 | 06/05/01 | Swanson et al. |
| JН | 6,245,061 | 06/12/01 | Panescu et al. |
| JI | 6,245,069 | 06/12/01 | Gminder |
| JJ | 6,261,311 | 07/17/01 | Sharkey et al. |
| JК | 6,264,651 | 07/24/01 | Underwood et al. |
| JL | 6,270,476 | 08/07/01 | Santoianni et al. |
| JM | 6,273,886 | 08/14/01 | Edwards et al. |
| JN | 6,277,112 | 08/21/01 | Underwood et al. |
| JO | 6,283,960 | 09/04/01 | Ashley |
| JР | 6,283,961 | 09/04/01 | Underwood et al. |
| JQ | 6,287,306 | 09/11/01 | Kroll et al. |
| JR | 6,290,715 | 09/18/01 | Sharkey et al. |
| JS | 2001/0023348 | 09/20/01 | Ashley et al. |
| JT | 2001/0029370 | 10/11/01 | Hodva et al. |
| JU | 6,304,785 | 10/16/01 | McCreery et al. |
| JV | 2001/0031963 | 10/18/01 | Sharkey et al. |
| JW | 6,308,091 | 10/23/01 | Avitall |
| JX | 6,332,880 | 12/25/01 | Yang et al. |
| JY | 2002/0019626 | 02/14/02 | Sharkey et al. |
| JZ | 2002/0022830 | 02/21/02 | Sharkey et al. |
| | JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY | JB 6,171,306 JC 6,179,836 JD 6,203,525 JE 6,217,528 JF 6,224,592 JG 6,241,754 JH 6,245,061 JI 6,261,311 JK 6,264,651 JL 6,270,476 JM 6,273,886 JN 6,277,112 JO 6,283,960 JP 6,283,961 JQ 6,287,306 JR 6,290,715 JS 2001/0023348 JT 2001/0029370 JU 6,304,785 JV 2001/0031963 JW 6,308,091 JX 6,332,880 JY 2002/0019626 | JB 6,171,306 01/09/01 JC 6,179,836 01/30/01 JD 6,203,525 03/20/01 JE 6,217,528 04/17/01 JF 6,224,592 05/01/01 JG 6,241,754 06/05/01 JH 6,245,061 06/12/01 JJ 6,261,311 07/17/01 JK 6,264,651 07/24/01 JL 6,270,476 08/07/01 JM 6,273,886 08/14/01 JN 6,277,112 08/21/01 JO 6,283,960 09/04/01 JP 6,283,961 09/04/01 JQ 6,287,306 09/11/01 JR 6,290,715 09/18/01 JJ 2001/0023348 09/20/01 JT 2001/0029370 10/11/01 JU 6,304,785 10/16/01 JW 6,308,091 10/23/01 JX 6,332,880 12/25/01 JY 2002/0019626 02/14/02 |

| Examiner Signature | Date Considered |
|---|--|
| | |
| EXAMINER: Initials citation considered Draw line through citation | if not in conformance and not considered. Include copy of this form with |

next communication to applicant.

Substitute Form PTO-1449 Application No. U.S. Department of Commerce Attorney's Docket No. (Modified) Patent and Trademark Office 14170-038006 10/712,006 Applicant **Information Disclosure Statement** Hugh R. Sharkey et al. by Applicant (Use several sheets if necessary) Filing Date Group Art Unit November 14, 2003 To be assigned (37 CFR §1.98(b))

| 77.4 | (255 022 | 02/12/02 | TT 1 . 1 | | |
|------|---|--|---|---|---|
| KA | 6,355,032 | 03/12/02 | Hovda et al. | | |
| KB | 6,379,350 | 04/30/02 | Sharkey et al. | | |
| KC | 6,416,508 | 07/09/02 | Eggers et al. | | |
| KD | 6,428,512 | 08/06/02 | Anderson et al. | | |
| KE | 6,440,127 | 08/27/02 | McGovern et al. | | |
| KF | 6,440,129 | 08/27/02 | Simpson | | |
| KG | 2002/0120259 | 08/29/02 | Lettice et al. | | |
| KH | 6,461,357 | 10/08/02 | Sharkey et al. | | |
| KI | 2002/0188284 | 12/12/02 | To et al. | | |
| KJ | 2002/0188291 | 12/12/02 | Uchida et al. | | |
| KK | 2003/0014050 | 01/16/03 | Sharkey et al. | | |
| KL | 6,547,810 | 04/15/03 | Sharkey et al. | | |
| KM | 6,562,028 | 05/13/03 | Nield et al. | | |
| KN | 6,604,003 | 08/05/03 | Fredricks et al. | | |
| КО | 6,638,276 | 10/28/03 | Sharkey et al. | | |
| KP | 6,645,203 | 11/11/03 | Sharkey et al. | | |
| KQ | 6,645,204 | 11/11/03 | Sharkey et al. | | |
| KR | 6,648,884 | 11/18/03 | To et al. | | |
| | KC KD KE KF KG KH KI KJ KK KL KM KN KO KP | KB 6,379,350 KC 6,416,508 KD 6,428,512 KE 6,440,127 KF 6,440,129 KG 2002/0120259 KH 6,461,357 KI 2002/0188284 KJ 2002/0188291 KK 2003/0014050 KL 6,547,810 KM 6,562,028 KN 6,604,003 KO 6,638,276 KP 6,645,203 KQ 6,645,204 | KB 6,379,350 04/30/02 KC 6,416,508 07/09/02 KD 6,428,512 08/06/02 KE 6,440,127 08/27/02 KF 6,440,129 08/27/02 KG 2002/0120259 08/29/02 KH 6,461,357 10/08/02 KI 2002/0188284 12/12/02 KJ 2002/0188291 12/12/02 KK 2003/0014050 01/16/03 KL 6,547,810 04/15/03 KM 6,562,028 05/13/03 KN 6,604,003 08/05/03 KO 6,638,276 10/28/03 KP 6,645,203 11/11/03 KQ 6,645,204 11/11/03 | KB 6,379,350 04/30/02 Sharkey et al. KC 6,416,508 07/09/02 Eggers et al. KD 6,428,512 08/06/02 Anderson et al. KE 6,440,127 08/27/02 McGovern et al. KF 6,440,129 08/27/02 Simpson KG 2002/0120259 08/29/02 Lettice et al. KH 6,461,357 10/08/02 Sharkey et al. KI 2002/0188284 12/12/02 To et al. KJ 2002/0188291 12/12/02 Uchida et al. KK 2003/0014050 01/16/03 Sharkey et al. KL 6,547,810 04/15/03 Sharkey et al. KM 6,562,028 05/13/03 Nield et al. KN 6,604,003 08/05/03 Fredricks et al. KO 6,638,276 10/28/03 Sharkey et al. KP 6,645,203 11/11/03 Sharkey et al. KQ 6,645,204 11/11/03 Sharkey et al. | KB 6,379,350 04/30/02 Sharkey et al. KC 6,416,508 07/09/02 Eggers et al. KD 6,428,512 08/06/02 Anderson et al. KE 6,440,127 08/27/02 McGovern et al. KF 6,440,129 08/27/02 Simpson KG 2002/0120259 08/29/02 Lettice et al. KH 6,461,357 10/08/02 Sharkey et al. KI 2002/0188284 12/12/02 To et al. KJ 2002/0188291 12/12/02 Uchida et al. KK 2003/0014050 01/16/03 Sharkey et al. KL 6,547,810 04/15/03 Sharkey et al. KM 6,662,028 05/13/03 Nield et al. KN 6,604,003 08/05/03 Fredricks et al. KO 6,638,276 10/28/03 Sharkey et al. KP 6,645,203 11/11/03 Sharkey et al. KQ 6,645,204 11/11/03 Sharkey et al. |

| | Foreig | n Patent Doo | cuments or P | Published Foreign | Patent / | Applic | ations | |
|----------|--------|--------------|--------------|-------------------|----------|--------|-----------------|-------|
| Examiner | Desig. | Document | Publication | Country or | | Subc | Transl | ation |
| Initial | ID | Number | Date | Patent Office | Class | lass | Yes | No |
| | KS | 2,188,668 | 11/16/95 | CA | | | | |
| | KT | | | | | | | |
| | KU | 3918316 | 03/22/90 | DE | | | | |
| | KV | 38 38 840 | 05/23/90 | DE | | | Abstract Yes | |
| | KW | 41 08 269 | 06/17/92 | DE | | | Abstract Yes | |
| | KX | 44 25 015 | 01/25/96 | DE | | | Abstract Yes | |
| | KY | 196 30 601 | 02/06/97 | DE | | | Abstract Yes | |

Examiner Signature

Date Considered

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| Substitute Form PTO-1449 (Modified) | U.S. Department of Commerce Patent and Trademark Office | Attorney's Docket No. 14170-038006 | Application No. 10/712,006 |
|-------------------------------------|--|------------------------------------|-------------------------------|
| | closure Statement | Applicant Hugh R. Sharkey et al. | |
| (Use several shi | eets if necessary) | Filing Date November 14, 2003 | Group Art Unit To be assigned |

| ina | | Document | Publication | ublished Foreign Country or | Paleill A | Subc | Translation | |
|---------------------|--------------|-------------|-------------|-----------------------------|-----------|------|-----------------|----|
| Examiner Initial | Desig. ID | Number | Date | Patent Office | Class | lass | Yes | No |
| | LA | 0 013 605 | 07/23/80 | EPO | | | | |
| | LB | 0 257 116 | 03/02/88 | EPO | | | | |
| | LC | 0 274 705 | 07/20/88 | EPO | | | Abstract Yes | |
| | LD | 0 392 837 | 10/17/90 | EPO | | | | |
| | LE | 0 407 057 | 01/09/91 | EPO | | _ | | |
| | LF | 0 439 263 | 07/31/91 | EPO | | | | |
| | LG | 0 521 595 | 01/07/93 | EPO | | | | |
| | LH | 0 648 475 | 04/19/95 | EPO | | | | |
| | LI | 0 682 910 | 11/22/95 | ЕРО | | | Abstract Yes | |
| | LJ | 0 737 487 | 10/16/96 | EPO | | _ | | |
| | LK | 2 313 949 | 01/07/77 | FR | | | | |
| | LL | 1,583,397 | 01/28/81 | GB | | | | |
| | LM | 2,160,102 | 12/18/85 | GB | | | | |
| | LN | WO 81/03271 | 11/26/81 | WIPO | | | | |
| | LO | WO 82/02488 | 08/05/82 | WIPO | | | _ | |
| | LP | WO 84/03829 | 10/11/84 | WIPO | | | | |
| | LQ | WO 92/05828 | 04/16/92 | WIPO | | | | _ |
| | LR | WO 93/15664 | 08/19/93 | WIPO | | | | |
| | LS | WO 94/10921 | 05/26/94 | WIPO | | | | |
| | LT | WO 95/10225 | 04/20/95 | WIPO | | | | |
| | LU | WO 95/10321 | 04/20/95 | WIPO | | | | |
| | LV | WO 95/10981 | 04/27/95 | WIPO | | | | |
| | LW | WO 96/00036 | 01/04/96 | WIPO | | | | |
| | LX | WO 96/00040 | 01/04/96 | WIPO | | | | |
| | LY | WO 96/29946 | 10/03/96 | WIPO | | | | |
| | LZ | WO 96/34571 | 11/07/96 | WIPO | | | | |

| Examiner Signature | Date Considered | |
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| EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with | | |

next communication to applicant.

| | Substitute Form PTO-1449 (Modified) | U.S. Department of Commerce Patent and Trademark Office | Attorney's Docket No. 14170-038006 | Application No. 10/712,006 |
|---|---|--|------------------------------------|----------------------------|
| Information Disclosure Statement by Applicant | | Applicant Hugh R. Sharkey et al. | | |
| | (Use several sheets if necessary) (37 CFR §1.98(b)) | | Filing Date November 14, 2003 | Group Art Unit |

| MA | WO 96/37146 | 11/28/96 | WIPO | | | |
|----|-------------|----------|------|--|---|--|
| MB | WO 96/39085 | 12/12/96 | WIPO | | | |
| MC | WO 96/39966 | 12/19/96 | WIPO | | | |
| MD | WO 98/11944 | 03/26/98 | WIPO | | | |
| ME | WO 98/34558 | 08/13/98 | WIPO | | | |
| MF | WO 99/18878 | 04/22/99 | WIPO | | | |
| MG | WO 99/47058 | 09/23/99 | WIPO | | | |
| МН | WO 99/51149 | 10/14/99 | WIPO | | _ | |

| | Other Documents (include Author, Title, Date, and Place of Publication) | | |
|---------------------|---|--|--|
| Examiner Initial | Desig. ID | Document | |
| | MI | Answer and Counterclaims of Defendant Arthrocare Corporation, filed 8/7/03, in re Smith & Nephew, Inc. v. Arthrocare Corporation (No. 03-2214 MaA, USDC, Western District of Tennessee, Western Division. | |
| | MJ | Fine, B.S., and Yanoff, Y., Ocular Histology, 2 nd Ed., pp. 130-159, Harper & Row, Hagerstown, Maryland, 1979. | |
| | MK | Cosman, E.R., and Cosman, B.J., "Methods of Making Nervous System Lesions," Neurosurgery, R.H. Wilkins and S.S. Rengachary, eds., Chapter 337, pp. 2490-2499 | |
| | ML | Elsasser et al., "An instrument for transurethral resection without leakage of current," Medizinal-Markt/Acta Medicotechnica, Vol. 24 (4), 1976 129-134. | |
| | ММ | "Lase®The Next Step in Conservative Therapy for Patients with Contained Herniated Discs," Clarus Medical, reprinted from http://www.clarus-medical.com/lase.htm , 5 pages | |
| | MN | "LASE Patient Information", Clarus medical, reprinted from http://www.clarus-medical.com/lase.htm , 5 pages | |
| | МО | Tobler et al., "Improved Outcome in the Treatment of Trigeminal Neuralgia by Percutaneous Stereostatic Rhizotomy with a New, Curved Tip Electrode," Neurosurgery, 12 (3), 1983, 313-317. | |
| | MP | Zinn, K.M. and Mockel-Pohl, S., "The Lens and Zonules," Ocular Fine Structure for the Clinician, Vol. 13, No. 3, 1973, pp. 143-155 | |

| Examiner Signature | Date Considered | | | |
|---|-----------------|--|--|--|
| | | | | |
| EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with | | | | |
| next communication to applicant. | 0.1 5 5 (0.70 | | | |